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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/637,100	08/08/2003	Baoquan Huang	HS-121	5037
24963	7590	11/07/2005	EXAMINER	
ENERGY CONVERSION DEVICES, INC. 2956 WATerview DRIVE ROCHESTER HILLS, MI 48309			SHEEHAN, JOHN P	
			ART UNIT	PAPER NUMBER

1742

DATE MAILED: 11/07/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/637,100

Applicant(s)

HUANG ET AL.

Examiner

John P. Sheehan

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-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-24 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-24 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on August 8, 2003 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- ☒ Notice of References Cited (PTO-892)
- ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date October 6, 2003.
- ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____.
- ☐ Notice of Informal Patent Application (PTO-152)
- ☐ Other: ____.

DETAILED ACTION

Claim Rejections - 35 USC § 112

1. The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

2. Claims 1, 15 to 18 and 20 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

- I. In claim 1, line 6; claims 15 to 18, line 2 and claim 20, line 5, the meaning of the phrase, "adapted to" is not clear. The word "adapt" means,

"to adjust to a specified use or situation"
(see page 14 of The American Heritage
Dictionary of the English Language"
attached tot this Office action).

In the context of these claims it is not clear how the recited alloy has been or will be adjusted to provide the recited property. For example, does this language mean that the claimed alloy composition will be or is capable of being adjusted or will be or is capable of being worked or heat treated to provide the recited property? What is meant by the phrase "adapted to" is not defined in the specification. If applicants are attempting to claim that the alloy composition is selected from the claimed ranges so as to provide the recited property, then the Examiner suggests that, in claim 1 applicants delete the phrase "being adapted

to reversibly store" and in claims 15 to 18 applicants delete the phrase "is adapted to reversibly store" (claims 15 to 18) and substitute the phrase --reversibly stores--. In claim 20 this rejection can be overcome by simply deleting the phrase "adapted to".

Claim Objections

3. Claim 14 is objected to because of the following informalities:

I. In claim 14 it is not clear whether the metals recited in the last line are in addition to the oxides, nitrides, etc. previously recited in claim 14 or whether the metals recited in the last line of claim 14 are actually in the form of the previously recited oxides, nitrides, etc.

Appropriate correction is required.

Claim Interpretation

4. The transitional phrase "comprising" is used through out applicants' claims.

Applicants are advised that the Examiner has interpreted "comprising" as set forth in MPEP 2111.03;

The transitional term "comprising", which is synonymous with "including," "containing," or "characterized by," is inclusive or open-ended and does not exclude additional, unrecited elements or method steps. See, e.g., *Invitrogen Corp. v. Biocrest Mfg., L.P.*, 327 F.3d 1364, 1368, 66 USPQ2d 1631, 1634 (Fed. Cir. 2003) ("The transition 'comprising' in a method claim indicates that the claim is open-ended and allows for additional steps."); *Genentech, Inc. v. Chiron Corp.*, 112 F.3d 495, 501, 42 USPQ2d 1608, 1613 (Fed. Cir. 1997) ("Comprising" is a term of art used in claim language which means that the named elements are essential, but other elements may be added and still form a construct within the scope of the claim.); *Moleculon Research Corp. v. CBS, Inc.*,

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793 F.2d 1261, 229 USPQ 805 (Fed. Cir. 1986); *In re Baxter*, 656 F.2d 679, 686, 210 USPQ 795, 803 (CCPA 1981); *Ex parte Davis*, 80 USPQ 448, 450 (Bd. App. 1948) (“comprising” leaves “the claim open for the inclusion of unspecified ingredients even in major amounts”).

Thus, applicants' claims do not preclude any additional alloying elements in any amount but rather applicants' claims are considered to encompass any additional component in any amount, even in major amounts.

5. The Examiner has interpreted the phrase, “up to 1.0 weight percent”, in claim 14, lines 2 and 3 to encompass 0 weight %. Thus, claim 14 does not necessarily require the presence of “one or more oxides...or calcium”.

Claim Rejections - 35 USC § 102/103

6. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

(e) the invention was described in (1) an application for patent, published under section 122(b), by another filed in the United States before the invention by the applicant for patent or (2) a patent granted on an application for patent by another filed in the United States before the invention by the applicant for patent, except that an international application filed under the treaty defined in section 351(a) shall have the effects for purposes of this subsection of an application filed in the United States only if the international application designated the United States and was published under Article 21(2) of such treaty in the English language.

(e) the invention was described in a patent granted on an application for patent by another filed in the United States before the invention thereof by the applicant for patent, or on an international application by another who has fulfilled the requirements of paragraphs (1), (2), and (4) of section 371(c) of this title before the invention thereof by the applicant for patent.

The changes made to 35 U.S.C. 102(e) by the American Inventors Protection Act of 1999 (AIPA) and the Intellectual Property and High Technology Technical

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Amendments Act of 2002 do not apply when the reference is a U.S. patent resulting directly or indirectly from an international application filed before November 29, 2000.

Therefore, the prior art date of the reference is determined under 35 U.S.C. 102(e) prior to the amendment by the AIPA (pre-AIPA 35 U.S.C. 102(e)).

7. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

8. Claims 1, 2, 8, 9 and 14 to 19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over each of Okada et al. (Okada '723, U.S. Patent Application Publication No. 2002/0189723) and Okada (Okada '490, U.S. Patent No. 6,835,490).

Each of the references teaches specific examples of hydrogen storage alloys having the body centered cubic structure and alloy compositions that are encompassed by applicants' claims (Okada '723, Figures 3, 4, 5, 11, 12, 13, 15 and 16 and paragraphs 0016, 0050 to 00052; and Okada '490, Figures 4, 5, 6, 7, 10, 11, 12, 13, 14, 15, 16, 17, 18, 19 and 20 and column 4, lines 7 to 10).

The claims and the references differ in that the references are silent with respect to the properties recited in applicants' claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the specific example

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alloys taught by each of the references have compositions that are encompassed by the instant claims. In view of this, the specific example alloys taught by the references would be expected to possess all the same properties as recited in the instant claims, In re Best, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, In re Best, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' In re Spada, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. In re Best, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

9. Claims 1, 2, 5, 8, 9 and 14 to 19 are rejected under 35 U.S.C. 102(e) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Okada et al. (Okada '444, U.S. Patent Application Publication No. 2004/0011444).

Okada '444 teaches specific examples of hydrogen storage alloys having the body centered cubic structure and alloy compositions that are encompassed by applicants' claims (Figures 1, 2, 5, 8, 9 and 14 to 19 and paragraph 0022).

The claims and the Okada '444 differ in that Okada '444 is silent with respect to the properties recited in applicants' claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the specific example alloys taught by Okada '444 have compositions that are encompassed by the instant claims. In view of this, the specific example alloys taught by the references would be

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expected to possess all the same properties as recited in the instant claims, *In re Best*, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, *In re Best*, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' *In re Spada*, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

10. Claims 1, 2, 8 to 11 and 13 to 24 are rejected under 35 U.S.C. 102(b) as anticipated by or, in the alternative, under 35 U.S.C. 103(a) as obvious over Kurimoto (cited in the IDS submitted October 6, 2003).

Kurimoto teaches specific examples of hydrogen storage alloys having the body centered cubic structure and alloy compositions that are encompassed by applicants' claims (English language translation paragraph 0025 and Table 1).

The claims and the Kurimoto differ in that Kurimoto is silent with respect to the properties recited in applicants' claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the specific example alloys taught by Kurimoto have compositions that are encompassed by the instant claims. In view of this, the specific example alloys taught by the references would be

expected to possess all the same properties as recited in the instant claims, *In re Best*, 195 USPQ, 430 and MPEP 2112.01.

"Where the claimed and prior art products are identical or substantially identical in structure or composition, or are produced by identical or substantially identical processes, a prima facie case of either anticipation or obviousness has been established, *In re Best*, 195 USPQ 430, 433 (CCPA 1977). 'When the PTO shows a sound basis for believing that the products of the applicant and the prior art are the same, the applicant has the burden of showing that they are not.' *In re Spada*, 15 USPQ2d 655, 1658 (Fed. Cir. 1990). Therefore, the prima facie case can be rebutted by evidence showing that the prior art products do not necessarily possess the characteristics of the claimed product. *In re Best*, 195 USPQ 430, 433 (CCPA 1977)." see MPEP 2112.01.

Claim Rejections - 35 USC § 103

11. Claims 3, 4, 6, 7, 10, 11, 12, 13 and 20 to 24 are rejected under 35 U.S.C. 103(a) as being unpatentable over Okada '444.

Okada teaches and is applied as set forth above. Okada '444 also teaches alloy compositions that overlap the alloy composition recited in each of applicants' claims (page 3, paragraph 0019). Further, Okada '444 teaches the use of rare earth elements as a getter for oxygen and other impurities (page 3, paragraph 0022).

Okada '444 and the claims differ in that Okada '444 does not teach the exact same proportions as recited in the instant claims.

However, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloy proportions taught by Okada '444 overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious

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to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Double Patenting

12. The nonstatutory double patenting rejection is based on a judicially created doctrine grounded in public policy (a policy reflected in the statute) so as to prevent the unjustified or improper timewise extension of the "right to exclude" granted by a patent and to prevent possible harassment by multiple assignees. See *In re Goodman*, 11 F.3d 1046, 29 USPQ2d 2010 (Fed. Cir. 1993); *In re Longi*, 759 F.2d 887, 225 USPQ 645 (Fed. Cir. 1985); *In re Van Ornum*, 686 F.2d 937, 214 USPQ 761 (CCPA 1982); *In re Vogel*, 422 F.2d 438, 164 USPQ 619 (CCPA 1970); and *In re Thorington*, 418 F.2d 528, 163 USPQ 644 (CCPA 1969).

A timely filed terminal disclaimer in compliance with 37 CFR 1.321(c) may be used to overcome an actual or provisional rejection based on a nonstatutory double patenting ground provided the conflicting application or patent is shown to be commonly owned with this application. See 37 CFR 1.130(b).

Effective January 1, 1994, a registered attorney or agent of record may sign a terminal disclaimer. A terminal disclaimer signed by the assignee must fully comply with 37 CFR 3.73(b).

Claims 1 to 24 are rejected under the judicially created doctrine of obviousness-type double patenting as being unpatentable over claims 1 to 24 of U.S. Patent No. 6,616,891. Although the conflicting claims are not identical, they are not patentably distinct from each other because the composition of the hydrogen storage alloy recited in these two sets of claims overlap. Although the proportions recited in these two sets

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of claims are not the same, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloy proportions claimed in '891 overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

Claims 1 to 24 are directed to an invention not patentably distinct from claims 1 to 24 of commonly assigned 6,616,891. Specifically, although the proportions recited in these two sets of claims are not the same, one of ordinary skill in the art at the time the invention was made would have considered the invention to have been obvious because the alloy proportions claimed in '891 overlap the instantly claimed proportions and therefore are considered to establish a prima facie case of obviousness. It would have been obvious to one of ordinary skill in the art to select any portion of the disclosed ranges including the instantly claimed ranges from the ranges disclosed in the prior art reference, particularly in view of the fact that;

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“The normal desire of scientists or artisans to improve upon what is already generally known provides the motivation to determine where in a disclosed set of percentage ranges is the optimum combination of percentages”, In re Peterson 65 USPQ2d 1379 (CAFC 2003).

Also, In re Geisler 43 USPQ2d 1365 (Fed. Cir. 1997); In re Woodruff, 16 USPQ2d 1934 (CCPA 1976); In re Malagari, 182 USPQ 549, 553 (CCPA 1974) and MPEP 2144.05.

13. Claims 1 to 24 are rejected under 35 U.S.C. 103(a) as being obvious over U.S. Patent 6,616,891.

The applied reference has a common inventor and assignee with the instant application. Based upon the earlier effective U.S. filing date of the reference, it constitutes prior art only under 35 U.S.C. 102(e). This rejection under 35 U.S.C. 103(a) might be overcome by: (1) a showing under 37 CFR 1.132 that any invention disclosed but not claimed in the reference was derived from the inventor of this application and is thus not an invention “by another”; (2) a showing of a date of invention for the claimed subject matter of the application which corresponds to subject matter disclosed but not claimed in the reference, prior to the effective U.S. filing date of the reference under 37 CFR 1.131; or (3) an oath or declaration under 37 CFR 1.130 stating that the application and reference are currently owned by the same party and that the inventor named in the application is the prior inventor under 35 U.S.C. 104, together with a terminal disclaimer in accordance with 37 CFR 1.321(c). This rejection might also be overcome by showing that the reference is disqualified under 35 U.S.C. 103(c) as prior art in a rejection under 35 U.S.C. 103(a). See MPEP § 706.02(I)(1) and § 706.02(I)(2).

Cited But Not Applied Prior Art

14. The prior art that has been cited by the Examiner but not used in this rejection is included for the following reasons;

Okada '090, teaches specific example alloys that are encompassed by at least some of applicants' claims (see Figures 3 to 5, 11 and 16) and an alloy composition that overlaps the alloy recited in some of applicants' claims (see paragraphs 0011, 0027 and 0032 to 0034).

Okada '196, teaches specific example alloys that are encompassed by at least some of applicants' claims (see Figures 3 and 6 to 12) and an alloy composition that overlaps the alloy recited in some of applicants' claims (see paragraphs 0011 to 0013 and 0019).

Iba '032, teaches specific example alloys that are encompassed by at least some of applicants' claims (see column 8, Table 1) and an alloy composition that overlaps the alloy recited in some of applicants' claims (see column 3, lines 8 to 21).

Iba '291, teaches specific example alloys that are encompassed by at least some of applicants' claims (see Figure 3, column 10, Table 1) and an alloy composition that overlaps the alloy recited in some of applicants' claims (see column 3, lines 63 to 67).

Hong et al. '017 teaches that use of a getter (column 8, lines 56 to 60).

Hong '205 teaches specific example alloys that are encompassed by at least some of applicants' claims (see column 9, Table 1, Groups 2, 3 and 4) and an alloy composition that overlaps the alloy recited in some of applicants' claims (see column 2, line 67 to column 3, line 21).

Venkatesan et al. teach an alloy composition that overlaps the alloy recited in some of applicants' claims (see column 11, lines 19-25).

Sapru et al. teaches specific example alloys that are encompassed by at least some of applicants' claims (see column 4, Table 13) and an alloy composition that overlaps the alloy recited in some of applicants' claims (see column 3, lines 19 to 22 and column 7, lines 40 to 47).

Japanese Patent Document No. 58-217654 teaches specific example alloys that are encompassed by at least some of applicants' claims (see page 301, the Table and page 302, the Figure).

Japanese Patent Document No. 04-337045 teaches specific example alloys that are encompassed by at least some of applicants' claims (see page 241, the Table).

Japanese Patent Document No. 4-74845 teaches specific example alloys that are encompassed by at least some of applicants' claims (see page 224, Table 1, Alloy A).

Japanese Patent Document No. 7-252560 teaches specific example alloys that are encompassed by at least some of applicants' claims (page 4, the Table, Alloys 1, 2, 6, 7 and 10).

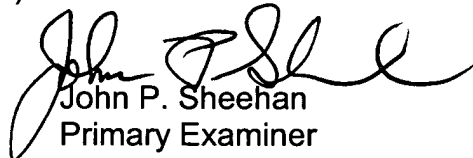
Japanese Patent Document No. 8-302442 teaches specific example alloys that are encompassed by at least some of applicants' claims (see page 4 Table 1, Alloys 4, 7 and 8 and Table 2, Alloy 4).

Conclusion

Any inquiry concerning this communication or earlier communications from the examiner should be directed to John P. Sheehan whose telephone number is (571) 272-1249. The examiner can normally be reached on T-F (6:45-4:30) Second Monday Off.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Roy King can be reached on (571) 272-1244. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).


John P. Sheehan
Primary Examiner
Art Unit 1742

jps